Tracking Status and Efficiency Studies

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Tracking Meeting

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Tracking Status

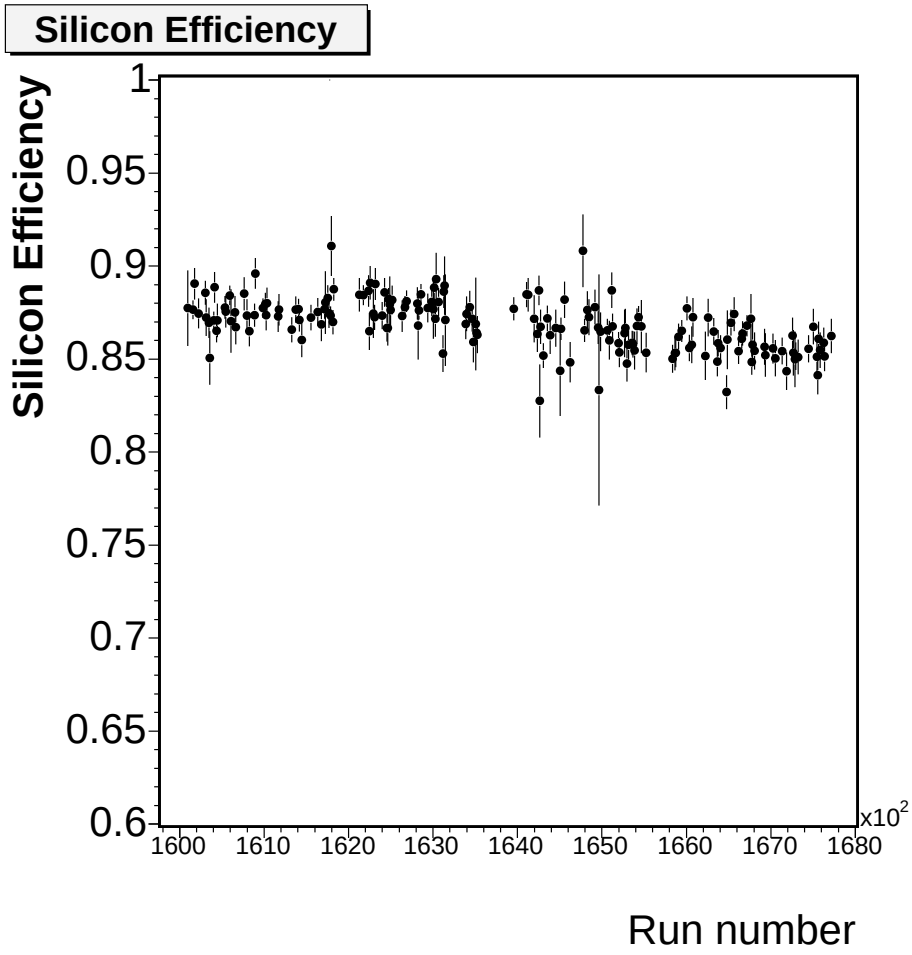
5.3.0 Status

- First integration release done.
- Includes new silicon material description
- Accepting tags for int2: tag by Thursday evening
- Will include: CT drift module code
  Code to make Kal tracking work in maxopt
  Bug fixes for Production crashes
  gcc fixes

Silicon Efficiency: Summer data

Study of silicon efficiency using triggered J/ψ dimuon candidates

- Denominator is COT tracks that are good CDF muons and are consistent with being from a J/ψ
- Numerator is that the track is found in the SVXII
  - At least 3 hits in 3 layers of SVXII
  - No more that 1 less than the expected number of hits
  - This criteria results in a low rate of mismeasured tracks



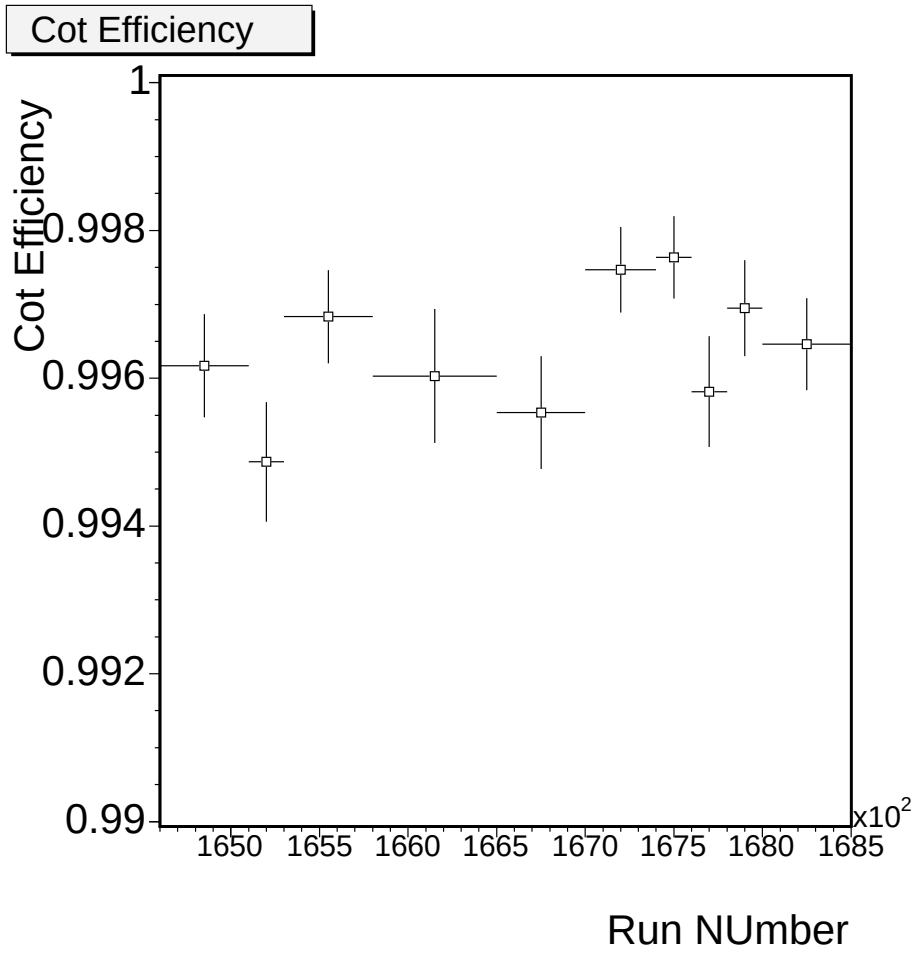
Efficiency/acceptance went down for later runs due to hardware failures

$88.5 \pm 0.1, 87.5 \pm 0.1, 86.7 \pm 0.1$

COT Efficiency: Summer data

Study of silicon efficiency using track embedding technique

- 1.5GeV or greater muons embedded randomly in jpmm data
- Denominator: an event with a track embedded within the COT acceptance
- Numerator: track is found and passes PadTrack criteria and can be matched to the generated track
- Could detect problems such as:
  - HL tracking being sensitive the the displaced beam spot
  - Loss of efficiency due to higher occupancy
- Not sensitive to less charge being collected on the COT wires



Consistent within results from previous data taking periods

99.65 ± 0.2